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RECOMMENDATIONS ON THE FY2001 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARD (STAA) NOMINATIONS: AN SAB REPORT

A REPORT BY THE SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARDS SUBCOMMITTEE OF THE EPA SCIENCE ADVISORY BOARD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

December 20, 2002

OFFICE OF THE ADMINISTRATOR
SCIENCE ADVISORY BOARD

EPA-SAB-EC-03-003

Honorable Christine Todd Whitman
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Subject: Recommendations on the FY2001 Scientific and Technological Achievement Awards (STAA) Award Nominations: An SAB Report

Dear Governor Whitman:

The EPA Science Advisory Board's (SAB) Scientific and Technological Achievement Awards (STAA) Subcommittee has completed its review of the nominations submitted by the Agency for the FY2001 awards program. The Subcommittee conducted its review in closed session on July 10-12, 2002 in Washington, DC. The results of the Subcommittee's efforts were reviewed and approved by the EPA Science Advisory Board's Executive Committee at a public teleconference meeting held on December 5, 2002.

The STAA program is sponsored by the Office of Research and Development (ORD), which continues to do a creditable job in soliciting and assembling these nominations. Each year (except for 1995 during the government-wide shutdown) the Board convenes a special panel to review nominated papers published by Agency researchers. Our recommendations for awards and further improvements in the STAA program are discussed in the enclosed report. We delayed final completion of this report in order to give ORD Staff ample time to process the 76 awards involving some 180 staff across the Agency.

The Agency solicited nominations in eleven categories this year: Control Systems & Technology (CS), Ecology & Ecosystem Risk Assessment & Ecosystem Protection (ER), Health Effects & Health Risk Assessment (HE), Monitoring & Measurement Methods (MM), Transport & Fate (TF), Review Articles (RA), Risk Management and Policy Formulation (RM), Integrated Risk Management (IR), Social Sciences (SS), Environmental Trends for Drivers of Future Risk (EF), and Environmental Education (EE). Agency scientists and engineers submitted a total of 140 nominations from among the first nine categories. Nominations were not submitted for the

last two categories this year (EF and EE). We recommend a total of 37 for a cash award, and recommend an additional 39 for Honorable Mention.

We have included recommendations for awards in eight of the nine categories for which nominations were submitted. In addition, the Subcommittee is recommending 39 papers for Honorable Mention. The authors whose papers were recommended for awards this year represent the Office of Policy, Economics, and Innovation (OPEI), and 11 research laboratories and centers within the Office of Research and Development.

The Subcommittee continues to encourage the Agency to nominate peer-reviewed papers from all programs and areas of scientific and technological research because scientific and technological achievements in these areas should not be limited to ORD laboratories. As we have pointed out in each of our recent reports, the Subcommittee notes the continuing lack of a significant number of nominations from Program areas other than ORD. Last year, for instance, we recommended awards for papers from ORD, OPEI, OPPTS, OSWER, OAR, and Region VIII. This year, only papers from ORD and OPEI were recommended, and just one from OPEI.

The process of publishing high quality EPA scientific findings in peer reviewed journals enhances the rigor of the science and the reputation of the Agency and its programs. Managers should encourage and provide the opportunities for their program scientists and engineers to conduct challenging investigations and publish the data and technical analysis which address aspects of the Agency's policies and regulations. We commend the staff of ORD for administering the STAA program. The ORD staff has made significant improvements in the program and in the nomination packages which have facilitated the Subcommittee's review procedures. The Subcommittee strongly recommends that ORD management continue to solicit participation of other Agency scientists and engineers as part of the Agency's goals to improve its scientific underpinnings and peer review of regulatory science. We recommend that ORD continue to announce this program early and that additional efforts be made to advertise it even more broadly next year to ensure greater participation by all program areas of the Agency.

The Subcommittee continues to feel that the STAA program is an important mechanism for recognizing and promoting high quality, peer-reviewed work published in top scientific and technological journals. This is even more critical as Agency programs continue to improve their overall commitment to, and compliance with the Agency's Peer Review Policy and the Peer Review Handbook. Furthermore, it supports your emphasis on sound science forming the basis for sound decisions.

We would appreciate being informed of the final disposition of awards and the mechanisms by which EPA advertises these awards to the Agency at large and the overall scientific community. This has been a long standing request by the Subcommittee and was the subject of a separate Commentary last year.

We are pleased to have participated in this process once again and believe it is appropriate for the Board to continue this annual review function. We look forward to serving the Agency again in this important activity.

Sincerely,

/Signed/
Dr. William Glaze, Chair
EPA Science Advisory Board

/Signed/
Dr. C. H. Ward, Chair
Scientific and Technological Achievement Awards Subcommittee
EPA Science Advisory Board

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ABSTRACT

This report represents the conclusions and recommendations of the U.S. Environmental Protection Agency's Science Advisory Board regarding the FY2001 EPA Scientific and Technological Achievement Awards (STAA) Program. The STAA Program is an Agency-wide competition to promote and recognize scientific and technological achievements by EPA employees, fostering a greater exposure of EPA research to the public. The Program was initiated in 1980 and is managed by the Office of Research and Development (ORD).

The Agency submitted for review 140 nominations from the first nine of the eleven award categories this year (Control Systems & Technology, Ecology & Ecosystem Risk Assessment & Ecosystem protection, Health Effects & Health Risk Assessment, Monitoring & Measurement Methods, Transport & Fate, Review Articles, Risk Management and Policy Formulation, Integrated Risk Management, Social Sciences, Environmental Trends for Drivers of Future Risk, and Environmental Education). Of these, the Subcommittee recommended 37 nominations (26 percent of the nominations) for awards, and also recommended that 39 additional nominations be recognized with Honorable Mention. The authors whose papers were recommended for awards this year represent the Office of Policy, Economics, and Innovation (OPEI), and 11 research laboratories and centers within the Office of Research and Development

The Subcommittee encouraged the Agency to continue support for the STAA program as a mechanism for recognizing and promoting high quality research in support of the Agency's mission. The Subcommittee also strongly encouraged that EPA broadly acknowledge the results of the award competition.

KEY WORDS: Awards, Technology, Scientific Achievements, Peer-Review

U.S. Environmental Protection Agency
EPA Science Advisory Board
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* Members of this SAB Panel consist of

a) SAB Members: Experts appointed by the Administrator to serve on one of the SAB Standing Committees.

b) SAB Consultants: Experts appointed by the SAB Staff Director to a one-year term to serve on ad hoc Panels formed to address a particular issue.

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1. EXECUTIVE SUMMARY

The Scientific and Technological Achievement Awards (STAA) Subcommittee of the EPA Science Advisory Board (SAB) reviewed and evaluated the 140 nominations for the FY2001 program that were submitted by EPA research laboratory directors and program office directors. The Subcommittee met in Washington, DC, on July 10-12, 2002, to determine award recommendations.

The STAA review program is a long-standing partnership between the Agency and the EPA Science Advisory Board. Each year since 1980 Agency scientists and engineers have submitted nominated scientific and technological papers through an internal Agency review process managed by the Office of Research and Development (ORD). (Note: The Agency did not conduct the STAA Program during 1995 when there was a government-wide shutdown.) This review process ensures that the best scientific papers are submitted to the SAB for evaluation in the awards process. The SAB convenes an experienced group of scientists and engineers who meet in a closed meeting to review and evaluate the nominations. The SAB review panel produces a set of award recommendations which ORD uses in preparing the actual awards.

This year, the Subcommittee recommended 37 nominations for awards and recommended that 39 additional papers be recognized with Honorable Mention. The Subcommittee applied the evaluation criteria evenly across all nomination categories, without attempting to ensure equal numbers or percentages of awards in each category. The offices from which papers were recommended for awards this year are the Office of Policy, Economics, and Innovation (OPEI), and 11 research laboratories and centers within the Office of Research and Development

The Subcommittee recommends that continued attention be paid to providing opportunities for EPA's scientists, engineers, and other technical personnel to conduct challenging, soundly based studies that result in peer-reviewed papers having high impact on important scientific issues and issues of specific importance to EPA.

2. INTRODUCTION

2.1 Request for EPA Science Advisory Board (SAB) Review

At the request of the EPA Office of Research and Development (ORD), the EPA Science Advisory Board convened a subcommittee to review and evaluate scientific and technological papers published in peer-reviewed journals by EPA authors and nominated for the FY2001 EPA Scientific and Technological Achievement Awards (STAA) program. The STAA Subcommittee was asked to evaluate nominated papers for awards based on the rules developed by ORD. In January 2002, the Office of Research and Development (ORD) provided the SAB with copies of 140 nominations. The Subcommittee used the 2001 STAA Nomination Procedures and Guidelines, which describes the award levels, eligibility criteria (including the minimum EPA contribution and employer status of the principal author), and the criteria the SAB should use to evaluate the nominations. Although there are eleven nomination categories, ORD only received nominations in nine categories this year. ORD grouped the papers into these nine categories of science and technology[1], and screened the papers for conformance with the nomination guidelines. No nominations were submitted in the other two categories this year.[2]

As described in the 2002 STAA Nomination Procedures and Guidelines, the SAB was asked to recommend papers for each of three Levels of Award.

a) Level I awards - are for nominees who have accomplished an exceptionally high-quality research or technological effort. The nomination should recognize the creation or general revision of scientific or technological principle or procedure, or a highly significant improvement in the value of a device, activity, program, or service to the public. It must be at least of national significance or have high impact on a broad area of science/technology. The nomination must be of far reaching consequences and recognizable as a major scientific/technological achievement within its discipline or field of study.

b) Level II awards - are for nominees who have accomplished a notably excellent research or technological effort that has qualities and values similar to, but to a lesser degree, than those described under Level I. It must have timely consequences and contribute as an important scientific/technological achievement within its discipline or field of study.

[1] These categories are: Control Systems & Technology (CS), Ecology & Ecosystem Risk Assessment (ER), Health Effects & Health Risk Assessment (HE), Monitoring & Measurement Methods (MM), Transport & Fate (TF), Review Articles (RA), Risk Management and Policy Formulation (RM), Integrated Risk Management (IR), and Social Sciences (SS)

[2] These categories are: Environmental Education (EE) and Environmental Trends for Drivers of Future Risk (EF).

c) Level III awards - are for nominees who have accomplished an unusually notable research or technological effort. The nomination can be for a substantial revision or modification of a scientific/technological principle or procedure, or an important improvement to the value of a device, activity, program, or service to the public. It must relate to a mission or organizational component of the EPA, or significantly affect a relevant area of science/technology.

d) Honorable Mention - The Subcommittee has also added a fourth non-cash level award for nominations which are noteworthy but which do not warrant a Level I, II or III award. Honorable Mention applies to nominations that: (1) may not quite reach the level described for a Level III award; (2) show a promising area of research that the Subcommittee wants to encourage; or (3) show an area of research that the Subcommittees feels is too preliminary to warrant an award recommendation (yet).

2.2 Subcommittee Review Procedures

The Review Panel was convened as an *ad hoc* subcommittee of the EPA Science Advisory Board (SAB). Membership included a significant number of returning STAA panelists; consequently, the level of experience with the process matched the level of scientific and technical expertise. In addition, many panelists hold editorial positions on highly regarded scientific journals.

Copies of all nominations/papers and the award program guidelines and nomination evaluation criteria were provided to Subcommittee members in advance of the review meeting. Subcommittee members selected nominations/papers to review based on their expertise, being sure to select, when appropriate, papers from across all nomination categories. Typically, each Subcommittee member chose at least 35 nominations to review. Members were encouraged to include nominations from areas of general expertise as well as areas in which they were most familiar. As part of the evaluation, Subcommittee members were asked to rank their own expertise in the field of science and technology addressed by each nomination they selected for review. These rankings were considered by the Subcommittee during the evaluation of each nomination. Each nomination was reviewed by at least three qualified Subcommittee members and then presented to the full Subcommittee and discussed during the review and evaluation meeting that was held in Washington, DC on July 10-12, 2002. Nominations judged to merit an award at some level were reviewed a second time by the Subcommittee, and in most cases, a third time, to ensure that a complete evaluation had been made and that the appropriate award level was recommended. Nominations that were initially not recommended for an award were also re-reviewed to determine if the nomination might merit either an Honorable Mention or numerical award.

In reviewing the nominations, the Subcommittee members qualitatively considered evaluation criteria factors such as: the overall impact of the nominated paper(s) on scientific

knowledge or technology relevant to environmental issues; the level of effort; the creativity, originality, initiative, and problem solving exhibited by the researchers; the beneficial impacts of the accomplishments and the recognition of the results outside the Agency; the extent to which an Agency function, mission, program, activity, or service is improved; and the nature and extent of the peer review, including the stature of the journal.[3]

Prior to the review and evaluation meeting, Subcommittee members forwarded the results of their review to the Designated Federal Officer (DFO) for the Subcommittee. The initial ranking along with the self-professed expertise of each reviewer for that particular nomination was compiled by the DFO in a tabular format (see Table I for an example) and then

Table I - Example of how Initial Individual Reviewer Rankings are Compiled

(Data for illustration purposes only)

Nomination Number	Title of Nomination	Reviewer			Final Ranking (at meeting)
		Name	Expertise *	Initial Individual Ranking	
HE0019	Health Assessment: Trinitrochicken wire	Dr. Smith Dr. Jones Dr. Adams	2 3 4	NR III NR	NR
ER0122	Ecological Impacts of Trinitrochicken wire	Dr. Smith Dr. Jones Dr. Adams Dr. Williams	4 3 2 3	HM III NR III	III
RA0098	Trinitrochicken wire - A Review	Dr. Black Dr. Green Dr. Jackson Dr. White	3 4 2 1	I I II III	I

* Expertise levels are rated as follows: 1 = not related to major discipline of reviewer; 2 = general knowledge of research area; 3 = general knowledge of active research; and 4 = specific area of active research. NR = Not Recommended for an award; HM = Honorable Mention; I, II, III = Award Levels

used at the review and evaluation meeting to help focus the discussion on each individual nomination. Initial individual rankings were subject to change based on discussions at the review and evaluation meeting. The final ranking agreed to at that meeting is a consensus ranking. The examples given in Table I are illustrative. All nominations receiving a recommendation for a Level I, II or III award or an Honorable Mention are listed in Appendix A.

The Subcommittee met on July 10-12, 2002, in Washington, DC in a closed session due to the discussions of issues concerning personal privacy and potential cash awards. Consistent

[3] These criteria are discussed more fully in section VII of the 1998 Nomination Procedures and Guidelines provided to the Subcommittee by the Agency.

with the requirements of the Federal Advisory Committee Act (Public Law 92-463) 5 U.S.C. App.2, and sections 552(b)(2) and (b)(6) of the Administrative Procedure Act, 5 U.S.C. 552(b)(2) and 552(b)(6), this closed meeting was announced in a Federal Register[4] notice signed by the EPA Administrator. All Subcommittee members were present at the meeting. The Subcommittee developed preliminary ratings for papers in each category, including discussion of each nominated paper. After completing all preliminary evaluations, the Subcommittee revisited the recommendations category by category to resolve any final issues and ensure consistency in applying the award criteria across categories.

This Subcommittee report was reviewed and approved by the SAB's Executive Committee (EC) at its public teleconference meeting on December 5, 2002 in Washington, DC. For that review, the Subcommittee report, less the actual award recommendations (Appendix A), was made available to the EC and the interested public.

[4] 67 Federal Register 44200, July 1, 2002.

3. EVALUATION OF THE FY2001 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARD NOMINATIONS

3.1 General Findings of the Subcommittee

In recent years, based on the continuing decline in the number of our recommendations for Level I and Level II awards (see Table II - Comparison of Level I & II Awards over Time), the Subcommittee has felt that the overall quality of the papers nominated has been declining. This year, we are happy to report, has shown an increase in Level I (from two to four) awards.

Table II - Comparison of Level I & II Awards over Time

Award Level	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001
Level I	4	3	1	0	2	4
Level II	16	11	7	5	11	7
Total Level I & II	20	14	8	5	13	11

We hope this is indicative of rise in the overall quality of submitted nominations and will be a continuing trend in the coming years. The STAA program is an important mechanism for recognizing and promoting high quality, peer-reviewed work published in top scientific and technological journals. The STAA Program can also serve as a benchmark for the quality of the research produced by the Agency since the same metrics and level and breadth of expertise of reviewers (Subcommittee members) are used each year. The authors whose papers were recommended for awards this year represent the Office of Policy, Economics, and Innovation (OPEI), and 11 research laboratories and centers within the Office of Research and Development.

The Subcommittee recommends that ORD continue to request the submission of nominations early, and that ORD advertise the program more aggressively, so that Regional and Program offices have adequate time to prepare their nominations. The limited number of nominations from outside of ORD was again a disappointment to the Subcommittee; especially the decrease from six to one nominations over last year. While we recognize that most of the in-house research is conducted by ORD scientists in ORD laboratories, the submission process needs to encourage submissions from outside of ORD as well.

The Subcommittee also encourages the Agency to continue to broaden the scope of nominated papers and to promote multi-disciplinary research that directly supports risk management and policy decisions. In evaluating nominations for awards, the Subcommittee looked for papers with well-developed hypotheses, good sampling or experimental design, and where the theoretical basis is verified by field validation or thorough testing of a model. We also looked for innovative applications of theories from other disciplines and collaborations of

interdisciplinary teams of scientists and engineers. In addition, the Subcommittee encourages the submission of nominations which address exposure assessment.

In order to evaluate papers that present incremental results in a series of published works, the Subcommittee recommends that the nomination guidelines prepared by ORD explicitly require discussion of related research published previously by the lead author(s), including information on any STAA awards given. When possible, nominations should include all papers in a series, providing they are within the time limit. This would allow a series of incremental studies to be evaluated for an award as a package.

Once again this year, the Subcommittee has recommended awards (including one Level I and one Level II award) in the Risk Management and Policy Formulation (RM) category. The Subcommittee hopes to see more peer reviewed papers nominated in this category next year, as this is an important area of research for the Agency. In addition, one paper was submitted in the Integrated Risk Assessment category, and while an award was not recommended, the Subcommittee was encouraged to see a nomination in this category and hopes to see additional nominations in the future. The Subcommittee feels that the process of converting Agency policy analysis and the technical foundations of its rule making into scientific articles for peer review is essential to maintain the quality in its science. This is also an important way to improve the Agency's reputation for scientific achievement. Laboratory directors and program managers should encourage the authors of policy formulation papers and regulatory impact analyses to develop technical articles for peer reviewed literature.

The focus of nominated papers should be on investigation and the creation of new technology and scientific and technical knowledge and information, rather than the reporting and communication of existing information, such as describing environmental regulations or current methods for pollution control. While such papers are extremely valuable and important for the agency, and the articles may be well-written and effective, they do not really fit within the purview of achievements in science and technology. The STAA Program is designed to recognize accomplishments in science and technology, hence, nominations in these fields and others should be focused on the new significant scientific knowledge developed by the Agency in these fields. Review articles with new and useful analysis and synthesis of existing information also are important; and in fact, several were recognized this year.

Finally, the Subcommittee believes that the STAA program provides one view of the technical and scientific progress that the Agency is making in various areas of research. This year's activities represent strengths in a variety of technological assessments, analytical measurements, and in certain areas of human health effects research.

3.2 STAA Program Administrative Recommendations

The Subcommittee commends the staff of ORD for administering the STAA program. The staff has made significant improvements in the program and the nomination packages that

have facilitated the Subcommittee's review procedures. The Subcommittee recommends that ORD management continue to solicit participation of other Agency scientists and engineers as part of the Agency's goals to improve its scientific underpinnings and peer review of regulatory science.

In the last few years, the Subcommittee has made a number of recommendations to ORD staff and managers that work with the STAA program, and through them, to the authors of the nominated papers. We are pleased to see that many of these recommendations have already been implemented. We appreciate the effort to accommodate our recommendations and, as a result, look forward to an even more improved program next year. We reiterate the following recommendations and/or comments:

a) Review articles (Category RA) must include a synthesis and an analysis, not just a summary of relevant literature.

b) The suggested citations provided for many of the nominations need to reflect the value of the work to the Agency. Once again, as was the case last year, many of this year's submissions merely contained a statement that reflected the nature of the research without any indication of the value of the work to EPA.

c) The Subcommittee again strongly urges the Agency to publicize the names of the award winning scientists and engineers and their papers both within the Agency and outside the Agency in a variety of ways. For example, the Agency should announce these winners by placing the title and abstract of their papers, along with the source of the paper, on the Agency's Website. The Agency should also develop press releases or letters from the Administrator that are targeted toward the journal that published the articles, professional society newsletters, and local newspapers in the vicinity of the scientist/engineer's research facility.

d) Subcommittee has requested, but has yet to receive any feedback from the Agency regarding how the Agency has handled the announcement of award winners or the general approach EPA has taken to present the awards themselves.

3.3 Award Recommendations

The EPA authors recommended for awards include scientists and engineers from the Office of Policy, Economics, and Innovation (OPEI), and 11 research laboratories and centers within the Office of Research and Development. See the detailed breakout of authors in Appendix A for further clarification.

Awards were recommended in eight of the eleven nomination categories, and for eight of the nine categories for which nominations were submitted. A total of 37 nominations were recommended for awards. A summary of the distribution of award recommendations

among categories is presented in Table III. There were 140 nominations with over 150 individual papers submitted. Of those submitted, 76 were recommended for an award (37) or

TABLE III - Summary of FY2001 Award Recommendations

Nomination Categories *	Total Nom.	Award Levels				Award %	Hon. Men.
		I	II	III	Tot		
Control Systems & Technology (CS)	17	0	1	0	1	6%	7
Ecology, Ecosystem Risk Assessment & Protection (ER)	26	0	0	3	3	12%	11
Health Effects, Health Risk Assessment (HE)	17	1	0	4	5	29%	1
Monitoring & Measurement Methods (MM)	35	2	1	10	13	37%	11
Transport and Fate (TF)	20	0	2	3	5	25%	3
Review Articles (RA)	19	0	2	5	7	37%	4
Risk Management & Policy Formulation (RM)	3	1	1	0	2	67%	1
Social Sciences (SS)	2	0	0	1	1	50%	0
Integrated Risk Assessment (IR)	1	0	0	0	0	0%	1
TOTALS:	**140**	**4**	**7**	**26**	**37**	**26%**	**39**

* Categories listed in the "1998 Nomination Procedures and Guidelines."

honorable mention (39). There were no re-categorized or combined nominations identified this year. The full list of award recommendations is contained in Appendix A. Eligible authors are noted in boldface in Appendix A. The percentage figure following their names reflects their individual level of effort on a given nomination as provided by EPA.

3.3.1 Level I Awards

Four Level I awards were recommended this year. Please see pages A-2 through A-6 of Appendix A for details.

3.3.2 Level II Awards

Seven Level II awards were recommended. Please see pages A-6 through A-8 of Appendix A for details.

3.3.3 Level III Awards

Twenty-six Level III awards were recommended. Please see pages A-8 through A-16 of Appendix A for details.

3.3.4 Honorable Mention

Thirty-nine nominations were judged as being worthy of an Honorable Mention. Please see pages A-16 through A-25 of Appendix A for details.

A list of acronyms used in Table A is on page A-25.

Appendix A - Nominations Recommended for Awards

This Appendix identifies the 37 nominations recommended for Level I, II, and III awards and the 39 nominations recommended for an Honorable Mention. This Appendix is divided into four parts. The first part (pages A-2 through A-6) provides information on the Level I award recommendations. The second part (pages A-6 through A-8) provides information on the Level II award recommendations. The third part (pages A-8 through A-16) provides information on the Level III award recommendations. The fourth part (pages A-16 through A-25) provides information on the Honorable Mention recommendations.

The first column (**Nom. #**) gives the nomination number as provided by EPA in the original submission. The second column (**Titles and Citations of Submitted Papers**) provides the full title and citation of all papers submitted as part of a given nomination. The third column (**Authors and Nominating Organization**) provides the name(s) of the EPA eligible authors along with their level of effort (percentage) on the nomination. The primary nominating organization is also listed. The fourth column **(Recommended Award Level**) indicates which award is recommended (Level I, II, or III or Honorable Mention). The last column (**Suggested Citation from Nominating Organization**) reflects the language of the citation that was provided to the Subcommittee by the Agency. These are <u>not</u> Subcommittee citations.

Appendix A -
FY2001 Scientific and Technological Achievement Awards (STAA)
Nominations Recommended for Awards

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
Nominations Recommended for a Level I Award ($5,000) - Total of Four				

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0052	**a) Design and Calibration of the EPA, $PM_{2.5}$ Well Impactor Ninety-Six (WINS).** ***Aerosol Science and Technology, 34(5):389-397 (2001)*** **b) Methodology for Measuring $PM_{2.5}$ Separator Characteristics Using an Aerosizer.** ***Aerosol Science and Technology, 34(5):398-406 (2001)*** **c) On the Modification of the Low Flow-Rate PM_{10} Dichotomous Sampler Inlet.** ***Aerosol Science and Technology, 34(5):407-415 (2001)*** **d) Optimization of the Wash-Off Method for Measuring Aerosol Concentrations.** ***Aerosol Science and Technology, 34(5):416-421 (2001)*** **e) Changes in Operating Procedures for Archiving Aerosol Concentration Uniformity for $PM_{2.5}$ and PM_{10} Sampler Testing.** ***Aerosol Science and Technology, 34(5):430-432 (2001)*** **f) Field Performance of $PM_{2.5}$ Federal Reference Method Samplers.** ***Aerosol Science and Technology, 34(5):433-443 (2001)*** **g) Evaluation of the Loading Characteristics of the EPA WINS $PM_{2.5}$ Separator.** ***Aerosol Science and Technology, 34(5):444-456 (2001)*** **h) Federal Reference and Equivalent Methods for Measuring Fine Particulate Matter.** ***Aerosol Science and Technology, 34(5):457-464 (2001)***	**Dr. Russell W. Wiener (25%)** **Dr. Michael Tolocka (10%)** **Mr. David Gemmill (10%)** **Mr. Frank McElroy (10%)** **Mr. Fu Lin Chen (5%)** ***NERL, RTP, NC***	**LEVEL I**	**For substantial contributions amd advacements to the technology of measurement of airborne, size-specific particulate matter.** **<u>Citations of Submitted for MM0052 (continued)</u>:** **i) Sensitivity analysis of the USEPA WINS $PM_{2.5}$ Separator.** ***Aerosol Science and Technology, 34(5):465-476 (2001)***

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
RM0081	**a) Field demonstration of Pervaporation for the Separation of Volatile Organic compounds from a Surfactant-Based Soil Remediation Fluid.** ***Journal of Hazardous Materials, B81:141-166 (2001)*** **b) VOC Removal from Water and Surfactant Solutions by Pervporation: A Pilot Study.** ***Separation and Purification Technology, 24:67-84 (2001)*** **c) Demonstration of Pilot-Scale Pervaporation Systems for Volatile Organic Compound Removal from a Surfactant Enhanced Aquifer Remediation Fluid. I: Spiral Wound Membrane Modules.** ***Environmental Progress, 20(1):53-63 (2001)*** **d) Reduction of Concentration Polarization Using Vibrating Membrane Module.** ***Journal of Membrane Science, 153:233-241 (1999)*** **e) Henry's Law Constants and Micellar Partitioning of VOCs in Surfactant Systems.** ***Journal of Chemical and Engineering Data, 45:38-47 (2000)***	**Dr. Leland M. Vane (50%)** **Mr. Franklin R. Alvarez (20%)** **Ms. Lynnann Paris (20%)** ***NRMRL, Cincinnati, OH***	**LEVEL I**	**For outstanding research and development activitiess to reduce material demands and costs for *in-situ* soil remediation.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
HE0104	**a) Inflammatory lung injury after bronchial instillation of humans with air pollution particles.** ***American Journal of Respiratory and Criticle Care Medicine, 164(4):704-708 (2001)*** **b) Acute pulmonary toxicity of particle matter filter extracts in rats: coherence with epidemiologic studies in Utah Valley residents.** ***Environmental Health Perspectives, 109(3):395-403 (2001)*** **c) Effect of aqueous extracts of PM_{10} filters from the Utah Valley on human airway epithelial cells.** ***American Journal of Physiology, Lung Cellular and Molecular Physiology, 277(21):L960-L967 (1999)*** **d) Activation of the EGF receptor signaling pathway in human epithelial cells exposed to Utah Valley particulate matter.** ***American Journal of Physiology, Lung Cellular and Molecular Physiology, 281:L483-L489*** **(2001) e) Soluble components of Utah Valley particulate pollution after alveolar macrophage function** ***in vivo*** **and** ***in vitro*****.** ***Inhalation Toxicology, 12:401-414 (2000)*** **f) Metals mimic airway epithelial injury induced in vitro by exposures to extracts of Utah Valley ambient particulate matter.** ***J. Toxicology and Environmental Health, In Press***	**Andrew Ghio (13%)** **Robert Devlin (13%)** **Daniel Costa (13%)** **Janice Dye (4%)** **Susanne Becker (4%)** **Jim Samet (4%)** **Inez Pagan (4%)** **Joleen Soukup (4%)** **Jackie Carter (4%)** **Jim Lehman (4%)** **Darrell Winsett (4%)** **Judy Richards (4%)** **Allen Ledbetter (4%)** **John McGee (4%)** ***NHEERL, RTP, NC***	**LEVEL I**	**Air pollution particles from the Utah Valley cause lung injury and inflammation in humans and animals.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0137	**a) Particle Size Distributions: Comparing Texture Systems, Adding Rock, and Predicting Soil Properties. *Soil Science* Society *of America Journal, 65:300-310 (2001)*** **b) Spatial Extrapolation of Soil Characteristics Using Whole-Soil Particle Size Distributions. *Journal of Environmental Quality, 30:101-111 (2001)*** **c) Predicting Physical and Chemical Water Properties from Relationships with Watershed Soil Charateristics. *Journal of Environmental Quality, 30:112-120 (2001)***	**Dr. M. A. Shirazi (80%)** ***NHEERL, Corvallis, OR***	**LEVEL I**	**For publication of novel research in describing soil texture, modeling the spatial relationship of texture and soil characteristics the influence water quality and the use of soil models to extrapolate observed water quality in a region.**
Nominations Recommended for a Level II Award ($2,500) - Total of Seven				
CS0007	**Test Results for Fuel Cell Operation on Anaerobic Digester Gas. *Journal of Power Sources, 86:283-288 (2000)***	**Dr. Ronald J. Spiegel (75%)** ***NRMRL, RTP, NC***	**LEVEL II**	**For significant technological achievement in the conceptual design and testing of a fuel cell system for operation on anaerobic digester gas that has great environmental potential.**
MM0037	**The development of Iodine Based Impinger Solutions for the Efficient Capture of Hg^0 Using Direct Injection Nebulization- Inductively Coupled Plasma Mass Spectrometry Analysis. *Environmental Science and Technology, 35(18):3764-3773 (2001)***	**Ms. Elizabeth J. Hedrick (80%)** ***NERL, Cincinnati, OH***	**LEVEL II**	**For research that contributes to the understanding of mercury capture and control in coal combustion emission.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
TF0055	**a) Hydroxyl Radical/Ozone Ratios During Ozonation Processes: I. The R_{ct} Concept.** ***Science & Engineering, 21(3):239-260 (1999)*** **b) Hydroxyl Radical/Ozone Ratios During Ozonation Processes: II. The Effect of Temperature, pH, Alkalinity and DOM Properties.** ***Science & Engineering, 22(2):123-150 (2000)***	**Dr. Michael S. Elovitz (90%)** ***NRMRL, Cincinnati, OH***	**LEVEL II**	**For advances in the understanding of the role of hydroxyl radicals during ozonation for drinking water treatment.**
TF0065	**Czech Air Quality Monitoring and Receptor Modeling Study.** ***Environmental Sciences and Technology, 32:843-854 (1998)***	**Mr. Joseph Pinto (40%)** **Mr. Robert K. Stevens (40%)** ***NERL, RTP, NC***	**LEVEL II**	**For contributions to the science of measurements and receptor modeling to improve air quality in the Czech Republic.**
RA0075	**a) Techniques and methods for the determination of haloacetic acids in potable water.** ***Journal of Environmental Monitoring, 2(4): 285-291 (2000)*** **b) Total organic carbon analyzers as tools for measuring carbonaceous matter in natural waters.** ***Journal of Environmental Monitoring, 3(1):102-112 (2001)*** **c) Quantitation of perchlorate ion: practices and advances applied to the analysis of common matrices.** ***Critical Reviews in Analytical Chemistry, 30(4):311-343 (2000)***	**Mr. Edward Todd Urbansky (100%)** ***NRMRL, Cincinnati, OH***	**LEVEL II**	**For timely and relevant reviews of analytical chemistry in support of the protection and production of drinking water.**
RM0082	**Trends in indicators of Eutrophication in Western Long Island Sound and the Hudson-Raritan Estuary.** ***Estuaries, (6):877-901 (2000)***	**Dr. Marie L. O'Shea (80%)** ***NRMRL, Cincinnati, OH***	**LEVEL II**	**The evaluation and management of eutrophication in Western Long Island Sound and the Hudson River Estuary.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
RA0139	**"Restoring Wild Salmon to the Pacific Northwest: Chasing an Illusion?".** ***"What We Don't Know about Pacific Northwest Fish runs - An Inquiry into Decision-Making" Portland State University Press, Portland, OR, pp.91-143 (2000)***	**Dr. Robert T. Lackey (100%)** ***NHEERL, Corvallis, OR***	**LEVEL II**	**For scientific and technical achievement in advancing salmon science and in facilitating it's use in developing effective salmon restoration policy.**
Nominations Recommended for a Level III Award ($1,000) - Total of Twenty-Six				
ER0019	**Carbon Loss and Optical Property Changes During Long-term Photochemical and Biological Degradation of Estuarine Dissolved Organic Matter.** ***Limnology & Oceanography, 45(6):1254-1264 (2000)***	**Dr. Richard G. Zepp (50%)** ***NERL, Athens, GA***	**LEVEL III**	**For elucidating the factors that control photochemically stimulated microbial decomposition in the aquatic environment.**
HE0026	**Lung Tumor KRAS and TP53 Mutation in Non-Smokers Reflect Exposure to PAH-Rich Coal Combustion Emissions.** ***Cancer Research, 61(18):6679-6681 (2001)***	**Dr. David M. DeMarini (15%)** **Ms. Nancy Hanley (15%)** **Dr. Judy Mumford (10%)** **Dr. Marc Mass (5%)** **Ms. Barbara Roop (5%)** ***NHEERL, RTP, NC***	**LEVEL III**	**Demonstration that mutations in tumors reflect exposure to environmental mutagens and carcinogens.**
MM0032	**Characterization of** ***Crytosporidium parvum*** **and** ***Crytosporidium muris*** **by Matrix Assisted Laser Desorption/ionization Time of Flight (MALDI-TOF) Mass Spectrometry.** ***Applied and Environmental Microbiology, 66(11):4720-4724 (2000)***	**Dr. Matthew L. Magnuson (34%)** **Mr. James H. Owens (33%)** **Ms. Catherine A. Kelty (33%)** ***NRMRL, Cincinnati, OH***	**LEVEL III**	**Advances in mass spectrometry of microbiological species, such as** ***Crytosporidium parvum*** **oocysts, for risk management research.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0034	**a) Interferences due to ozone-scavenging reagents in the GC-ECD determination of aldehydes and ketones as the O-(2,3,4,5,6-pentaflurobenzyl)oximes.** ***Science & Engineering, 33(5):551-561 (2000)*** **b)Ozone scavenging reagents suitable for use in the quantitative determination of aldehydes as the O-(2,3,4,5,6-pentafluorobenzyl)oximes by GC-ECD.** ***Water Research, 34(9):2610-2613 (2000)***	**Mr. Edward Todd Urbansky (70%)** **Mr. Matthew L. Magnuson (10%)** **Mr. Michael S. Elovitz (10%)** ***NRMRL, Cincinnati, OH***	**LEVEL III**	**For advancing the analytical chemistry associated with risk management research on ozonation byproducts.**
MM0035	**a) Influences of metal cations on the determination of the "-oxocarboxylates as the methyl esters of the O-(2,3,4,5,6-pentfluorobenzyl)oximes by gas chromatography: the importance of accounting for matrix effects.** ***Journal of Environmental Monitoring, 2(4):334-338 (2000)*** **b) Comparative methodology in the determination of "-oxocarboxylates in aqueous solution: ion chromatography verses gas chromatography after oximation, extraction and esterification.** ***J. Chromatography A*****, 867(1-2):143-149 (2000)**	**Dr. Edward Todd Urbansky (90%)** ***NRMRL, Cincinnati, OH***	**LEVEL III**	**For advances in the science of measuring "-oxocarboxylate concentrations in ozonated potable water.**
MM0036	**Optimization of Raman Spectroscopy of Organics in Water.** ***Applied Spectroscopy, 55(6):750-766 (2001)***	**Dr. Timothy W. Collette (75%)** ***NERL, Athens, GA***	**LEVEL III**	**For developing definitive tools for organic chemical speciation, leading to more certain exposure analysis.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0038	**a) Measurement of volatile organic compounds by the US Environmental Protection Agency Compendium Method TO-17 - Evaluation of performance criteria.** ***Journal of Chromatography A, 183:101-111 (1998)*** **b) Ozone reaction with n-aldehydes (n=4-10), benzaldehyde, ethanol, isopropanol, and n-propanol adsorbed on a dual-bed graphitized carbon-carbon molecular sieve adsorbent cartridge.** ***Journal of Chromatography A, 929:89-100 (2001)***	**Dr. William A. McClenny (50%)** **Ms. Maribel Colòn (40%)** ***NERL, RTP, NC***	**LEVEL III**	**For advanced research on use of solid adsorbents and associated analytical equipment for determination of volatile organic compound in ambient air.**
MM0039	**Comparison of Sampling Methods for Semi-Volatile Organic carbon (SVOC) Associated with $PM_{2.5}$.** ***Aerosol Science & Technology, 34:9-22 (2001)***	**Dr. Joellen Lewtas (50%)** **Dr. Derrick Booth (10%)** **Mr. Steve Reimer (10%)** ***NERL, RTP, NC***	**LEVEL III**	**In recognition of scientific contributions to the measurement of semi-volatile organic carbon associated with airborne fine particles.**
MM0043	**Determination of perchlorate at parts-per-billion levels in plants by ion chromatography.** ***Journal of Chromatography A, 898(2):193-199 (2000)***	**Dr. J. Jackson Ellington (75%)** ***NERL, Athens, GA***	**LEVEL III**	**For meeting a critical need for an analytical method for perchlorate at parts-per-billion levels in environmental samples.**
MM0045	**Ecological condition of the Estuaries of the Atlantic and Gulf Coasts of the United States.** ***Environmental Toxicology and Chemistry, 20(1):99-106 (2001)***	**Dr. J. Kevin Summers (100%)** ***NHEERL, Gulf Breeze, FL***	**LEVEL III**	**For developing and applying probabilistic monitoring approaches to assess the condition of the Nation's estuarine resources.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0047	**a) HPLC Determination of Cyanuric Acid in Swimming Pool Waters Using Phenyl and Confirmatory Porous Graphitic Carbon Columns.** ***Analytical Chemistry, 73(14):3358-3364 (2001)*** **b) Rapid Analysis of Cyanuric Acid in Swimming Pool Waters by high Performance Liquid Chromatography.** ***Chromatographia, 53(7/8):454-455 (2001)*** **c) An HPLC Method with UV Detection, pH Control, and Reductive Ascorbic Acid for Cyanuric Acid Analysis in Water.** ***Analytical Chemistry, 72(23):5820-5828 (2000)***	**Dr. Ricardo Cantu (45%)** **Dr. Otis Evans (30%)** **Dr. Fred K. Kawahara (5%)** **Dr. Matthew L. Magnuson (5%)** **Dr. Jody A. Shoemaker (5%)** **Mr. Larry J. Wymer (5%)** **Dr. Alfred P. Dufour (5%)** ***NERL, Cincinnati, OH***	**LEVEL III**	**For improved methods to assess the magnitude of human ingestion of recreational water during swimming activities.**
TF0059	**Limitations of ROI Testing for Venting design: Description of an Alternative Approach Based on Attainment of a Critical Pore-Gas Velocity in Contaminated Media.** ***Ground Water Monitoring and Remediation, 21(1):97-114 (2001)***	**Dr. Dominic C. DiGiulio (85%)** ***NRMRL, Ada, OK***	**LEVEL III**	**A new method of design for soil venting systems.**
TF0064	**a) Uptake and Phytotransformation of Organophosphorus Pesticides by Axanically Cultivated Aquatic Plants.** ***Journal of Agriculture & Food Chemistry, 48(12):6114-6120 (2000)*** **b) Uptake and Phytotransformation of o, p' - DDT and p, p' -DDT by Axanically Cultivated Aquatic Plants.** ***Journal of Agriculture & Food Chemistry, 48(12):6121-6127 (2000)***	**Dr. N. Lee Wolfe (20%)** **Dr. A. Wayne Garrison (20%)** **Mr. Christopher Mazur (10%)** ***NERL, Athens, GA***	**LEVEL III**	**For demonstration of plant mediated accumulation and metabolism of pesticides.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
RA0070	**Sewer and Tank flushing for Sediment, Corrosion, and Pollution Control.** ***Journal of Water Resources Planning and Management, 127(3):194-201 (2001)***	**Mr. Chi-Yuan Fan (65%)** **Mr. Richard Field (15%)** ***NRMRL, Cincinnati, OH***	**LEVEL III**	**Critical review of sewer impacts and control methods**
RA0073	**The Role of Chlorine In Dioxin Formation.** ***Transactions of the Institute of Chemical Engineers, 78(Part B):47-52 (2000)***	**Dr. Brian K. Gullett (70%)** ***NRMRL, RTP, NC***	**LEVEL III**	**Review and synthesis of research relating to chlorination mechnisms during formation of toxic polychlorinated dibenzodioxin and polychlorinated dibenzofuran.**
RA0074	**a) Expeditious Solvent-free Organic Synthesis Using Microwave Irratation.** ***ACS Symposium Series Book Chapter- "Green Chemical Syntheses and Processes", ACS(767):292-312*** **b) Solvent-free accelerated organic synthesis using microwaves, Pure and Applied Chemistry (IUPAC), 73(1):193-198 (2001)** **c) Microwave Organic Synthesis, McGraw Hill Yearbook of Science and Technology 2002. pp. 223-225.**	**Dr. Rajender S. Varma (100%)** ***NRMRL, Cincinnati, OH***	**LEVEL III**	**For exceptional technical achievement in identifying and summarizing a 'greener" approach to chemical processing**
RA0077	**Ozone Depletion and the Air-Sea Exchange of the Greenhouse and Chemically Reactive trace Gases.** ***Chemosphere-Global Science Change*****, 2(2):137-149 (2000)**	**Dr. Richard G. Zepp (50%)** ***NERL, Athens, GA***	**LEVEL III**	**For reviewing and synthesizing information related to effects of ozone depletion on air-sea exchange of trace gases.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
SS0084	**Quality Science in the Courtroom: U.S. EPA Data Quality and Peer Review Policies and Procedures Compared to Daubert Factors.** ***Environmental Forensics, 1(4):197-203 (2000)***	**Mr. George M. Brilis (60%)** **Mr. Jeffrey C. Worthington (30%)** ***OEI, Washington, DC***	**LEVEL III**	**For equating EPA policies and procedures to U.S. supreme court sound science criteria.**
HE0088	**a) Hearing Loss following exposure during development to polychlorinated biphenyls: A cochlear site of action.** ***Hearing Research, 144(1-2):196-204 (2000)*** **b) PCBs, thyroid hormones and ototoxicity in rats: Cross-fostering experiments demonstrate the impact of postnatal lactation exposure.** ***Toxicological Sciences, 57(1):131-140 (2000)***	**Dr. Kevin M. Crofton (50%)** **Ms. Michele S. Taylor (20%)** **Dr. Prasada R. S. Kodavanti (5%)** **Ms. Laura S. Kehn (5%)** **Ms. Ethel Derr-Yellin (4%)** ***NHEERL, RTP, NC***	**LEVEL III**	**Research on the relevance of animal models of developmental thyroid hormones disruption in the neurotoxicity for polychlorinated biphenyls.**
RA0090	**Hypersensitivity and Asthma.** ***Book Chapter in: Pulmonary Immunotoxicology, Eds Cohen, Zelikoff and Schlesinger, Kluwer publishers, pp 107-126 (2000)***	**Dr. Mi Gilmore (100%)** ***NHEERL, RTP, NC***	**LEVEL III**	**For reviewing and integrating state of the art knowledge on mechanisms of allergic lung disease.**
ER0095	**Hypoxic Effects on Growth of *Palaemonetes vulgaris* Larvae and other species: using Constant Exposure Data to Estimate Cyclic Exposure Response.** ***Journal of Experimental Biology and Ecology, 247:243-255 (2000)***	**Ms. Laura Coiro (60%)** **Dr. Don Miller (15%)** ***NHEERL, RTP, NC***	**LEVEL III**	**For research into the hypoxic effect on the growth of *Palaemonetes vulgaris* larvae and other species.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
HE0102	**a) Daily Variation of Particulate Air Pollution and Poor Cardiac Autonomic control in the elderly.** ***Environmental Health Perspectives, 107(7):521-525 (1999)*** **b) Particulate Matter and Heart Rate Variability Among Elderly Retirees: the Baltimore 1998 PM Study.** ***Journal of Exposure Analysis and Environmental Epidemiology, 11(2):116-122 (2001)***	**Dr. John P. Creason (30%)** **Ms. Debra B. Walsh (20%)** **Mr. Ronald W. Williams (15%)** **Dr. Lucas M. Neas (10%)** **Dr. Linda Sheldon (5%)** **Dr. Roy Zweidinger (5%)** ***NHEERL, RTP, NC***	**LEVEL III**	**In recognition of the NHEERL/EBB Research Team's innovative epidemiologic panel of the effect of particle matter on heart rate variability in the elderly.**
ER0119	**Description and evaluation of a short-term reproduction test with the fathead minnow (*Pimephales promelas*).** ***Environmental Toxicology and Chemistry, 20(6):1276-1290 (2001)***	**Dr. Gerald Ankley (20%)** **Ms. Kathleen Jensen (20%)** **Mr. Michael Kahl (20%)** **Mr. Joseph Korte (20%)** **Ms. Elizabeth Makynen (20%)** ***NHEERL, Duluth, MN***	**LEVEL III**	**Development of a short-term fish reproduction assay for identifying endocrine-disrupting chemicals.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
HE0122	**a) The effects of atrazine on female wistar rats: an evaluation of the protocol for assessing pubertal development and thyroid function.** ***Toxicology Science, 58(2):366-376 (2000)*** **b) The effects of atrazine on male wistar rats: an evaluation of the protocol for assessing pubertal development and thyroid function.** ***Toxicology Science, 58(1):50-59 (2000)*** **c) Endocrine-disrupting chemicals: prepubertal exposures and effects on sexual maturation and thyroid function in the male rat. A focus on the EDSTAC recommendations.** ***Critical Reviews in Toxicology, 30(2):197-252 (2000)*** **d) Endocrine-disrupting chemicals: perpubertal exposures and effects on sexual maturation and thyroid function in the female rat. A focus on the EDSTAC recommendations.** ***Critical Review in Toxicology, 30(2):135-196 (2000)***	**Dr. Tammy Stoker (25%)** **Dr. Susan Laws (25%)** **Dr. Jerome Goldman (20%)** **Dr. Ralph Cooper (15%)** **Ms. Janet Ferrell (5%)** **Ms. Dorothy Guidici (5%)** **Ms. Judith Schmid (1%)** **Dr. Earl Gray (1%)** **Dr. Robert Kavlock (1%)** ***NHEERL, RTP, NC***	**LEVEL III**	**The effects of endocrine disruptors on male and female pubertal development.**
TF0126	**A Screening-Level Model Evaluation of Atrazine in the Lake Michigan Basin.** ***Journal of Great Lakes Research, 25(1):94-106 (1999)***	**Mr. Kenneth R. Rygwelski (60%)** **Mr. William L. Richardson (20%)** **Mr. Douglas D. Endicott (20%)** ***NHEERL, RTP, NC***	**LEVEL III**	**Development and implementation of a comprehensive mass balance model of the herbicide atrazine within the Lake Michigan watershed.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0134	**Assessing the Effects of Natural and Anthropogenic Stressors in the Potomac Estuary: Implications for Long-term Monitoring.** ***Environmental Monitoring and Assessment, 63:237-251 (2000)***	**Dr. Henry Walker (70%)** **Dr. James Latimer (15%)** **Dr. Edward Dettman (15%)** ***NHEERL, RTP, NC***	**LEVEL III**	**For advancing an integrated environmental monitoring and assessment approach.**
Nominations Recommended for Honorable Mention (No Cash Award)- Total of Thirty-Nine				
CS0005	**Fine Particle Emission from Residual fuel Oil Combustion: Characterization and Mechanisms of Formation**. ***Proceedings of the Combustion Institute,28:2651-2658 (2000)***	**Dr. William P. Linak (40%)** **Dr. Charles Andrew Miller (40%)** ***NRMRL, RTP, NC***	**Honorable Mention**	**For research contributing to a fuller understanding of particle formation mechanisms in oil-fired combustion systems.**
CS0006	**Preliminary Estimates of Performance and Cost of Mercury control Technology Applications on Electric Utility Boilers.** ***Journal of the Air and Waste Management Association, 51:1460-1470 (2001)***	**Dr. Ravi K. Srivastava (60%)** **Mr. Charles B. Sedman (10%)** **Mr. James D. Kilgroe (10%)** ***NRMRL, RTP, NC***	**Honorable Mention**	**For a comprehensive analysis of performance and cost characteristics of mercury control technologies for utility boilers.**
CS0008	**Issues Related to Solution chemistry in Mercury Sampling Impingers.** ***Journal of the Air and Waste Management Association, 51:688-698 (2001)***	**Dr. William P. Linak (35%)** **Mr. Jeffrey V. Ryan (35%)** ***NRMRL, RTP, NC***	**Honorable Mention**	**For advances in the understanding and development of improved mercury speciation measurement methods.**
CS0013	**a) An Expeditious Solvent-free Route to Ionic Liquids Using Microwaves.** ***Chemical Communications, pp. 643-644 (2001)*** **b) Solvent-free Preparation of ionic Liquids Using a Household Microwave Oven.** ***Pure and Applied Chemistry (IUPAC), 73(8):1309-1313 (2001)***	**Dr. Rajender S. Varma (90%)** ***NRMRL, Cincinnati, OH***	**Honorable Mention**	**For outstanding research in "Green" synthesis of non-volatile ionic liquid solvents.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
CS0015	**Long- term Performance for Permeable Reactive barrier monitoring at the U.S. Coast Guard Support Center, Elizabeth City, *J. of Hazardous Materials*, 68:109-124 (1999)**	**Dr. Robert W. Puls (80%)** **NRMRL, Ada, OK**	**Honorable Mention**	**For pioneering research on the long-term performance of permeable reactive barriers for groundwater remediation.**
CS0016	**a) "Basic Combustion and Incineration". *Handbook of Environmental Engineering Calculations, pp. 2.147-2.316 (2000)*** **b) "Incineration Technologies and facility Requirements". *Handbook of Environmental Engineering Calculations, pp. 2.491-2.573 (2000)*** **c) "Air Emissions Control". *Handbook of Environmental Engineering Calculations, pp. 3.3-3.141 (2000)***	**Dr. C.C. Lee (45%)** **Mr. George L. Huffman (45%)** **Dr. J. C. S. Chang (6%)** ***NRMRL, Cincinnati, OH***	**Honorable Mention**	**For providing the public with an extremely useful set of calculations regarding waste destructor designs and add-on emission controls.**
CS0017	**Phyto-Removal of Trinitrotoluene from Water with Batch Kinetic Studies. *Water Research, 34(10):2713-2722 (2000)***	**Dr. Steven C. McCutcheon (40%)** **Ms. Amy E. Bergstedt (10%)** ***NERL, Athens, GA***	**Honorable Mention**	**For establishment of critical design data to translate scientific discoveries into protocols for cleanup of wetlands.**
ER0022	**Sediment chemical contamination and toxicity associated with a coastal golf course complex. *Env. Toxicology and Chemistry, 20(7):1390-1398 (2001)***	**Dr. Michael Lewis (65%)** **Mr. Stephen Foss (10%)** **Ms. Peggy Harris (10%)** **Mr. Roman Stanley (10%)** **Dr. James Moore (5%)** ***NHEERL, Gulf Breeze, FL***	**Honorable Mention**	**Impact of a Golf Complex on Adjacent Sediment Toxicity and Quality.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
ER0023	**a) Latitudinal Gradients in Benthic Community Composition in Western Atlantic Estuaries.** ***Journal of Biogeography, 26(5):1007-1023 (1999)*** **b) Biogeography of Benthic Macroinvertebrates in Estuaries Along the Gulf of Mexico and Western Atlantic Coasts.** ***Hydrobiologia, 436(1-3):17-33 (2000)***	**Ms. Virginia D. Engle (60%)** **Dr. J. Kevin Summers (40%)** ***NHEERL, Gulf Breeze, FL***	**Honorable Mention**	**Establishing biogeographical estuarine benthic species distribution boundaries for application in environmental stressor assessments.**
MM0027	**Field Measurement of Dissolved Oxygen: A Comparison of Methods.** ***Groundwater Monitoring and Remediation, Fall(2001):1-10 (2001)***	**Dr. Richard T. Wilkin (45%)** **Ms. Mary Sue McNeil (25%)** **Ms. Cherri Adair (25%)** **Dr. John Wilson (5%)** **NRMRL, Ada, OK**	**Honorable Mention**	**For research that improves the quality of environmental monitoring and assessment studies by evaluating field measurement practices.**
MM0029	**Influence of reagent purity on the ion chromatographic determination of bromate in water using 3, 3'-dimethoxybenzidine as a prochromophore for photometric detection.** ***Journal of Environmental Monitoring, 2(6):571-575 (2000)***	**Mr. Edward Todd Urbansky (60%)** **Ms. Stephanie K. Brown (40%)** **NRMRL, Cincinnati, OH**	**Honorable Mention**	**For advancing the analysis of potable water for bromate, a disinfection byproduct.**
MM0031	**Dissociation of sulfur hexafluoride tracer gas in the presence of an indoor combustion source.** ***Journal of the Air and Water Management Association, 51:616-622 (2001)***	**Dr. Zhishi Guo (30%)** **Dr. Ronald B. Mosley (15%)** **Ms. Shirley J. Wasson (15%)** ***NRMRL, RTP, NC***	**Honorable Mention**	**Investigation into SF_6 breakdown and its potential impact on measurements of air pollutants and ventilation rates.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0033	**Stable Association Complex Electrospray Mass Spectrometry for the Determination of Cyanuric Acid. *Journal of the American Society for Mass Spectrometry, 12(10):1085-1091 (2001)***	**Dr. Matthew L. Magnuson (34%) Ms. Catherine A. Kelty (33%) Dr. Ricardo Cantú (33%) NRMRL, Cincinnati, OH**	**Honorable Mention**	**Development of stable association complex electrospray mass spectrometry for regulatory and environmental research.**
MM0040	**Application of DNPH Derivatization with LC/MS to the identification of Polar carbonyl Disinfection By-products in Drinking Water. *Ozone Science & Engineering, 22(6):653-675 (2000)***	**Dr. Susan D. Richardson (75%) Ms. Tashia V. Caughran (15%) *NERL, Athens, GA***	**Honorable Mention**	**For developing a method to detect and identify highly polar DBPs in drinking water.**
MM0044	**A comparison of four fluorescent antibody-based methods for purifying, detecting, and confirming *Cryptosporidium parvum* in surface water. *Journal of Parasitology, 87(5):1124-1131 (2001)***	**Dr. H.D. Alan Lindquist (50%) Mr. Michael Ware (25%) Mr. Ronald E. Stetler (20%) Mr. Larry Wymer (4%) Dr. Frank W. Schaefer, III (1%) *NERL, Cincinnati, OH***	**Honorable Mention**	**For describing and characterizing the advantages and disadvantages of currently available *Crytosporidium* detection methods.**
MM0048	**Development of an index of biotic integrity for the Mid-Atlantic Highlands Region. *Transactions of the American Fisheries Society, 130:857-877 (2001)***	**Dr. Frank H. McCormick (50%) Dr. Philip R. Kaufmann (10%) Mr. David V. Peck (10%) Dr. John L. Stoddard (5%) *NERL, Cincinnati, OH***	**Honorable Mention**	**Advances in indicator development and assessment of conditions in aquatic ecosystems.**
MM0051	**Determination of Perchlorate in Tobacco Plants and Tobacco Products. *Environmental Sciences & Technology*, *35(15):3213-3218 (2001)***	**Dr. J. Jackson Ellington (25%) Dr. Nelson L. Wolfe (25%) Dr. Arthur W. Garrison (25%) *NERL, Athens, GA***	**Honorable Mention**	**For a creative approach to understanding perchlorate uptake by tobacco plants and occurrence in tobacco products.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
TF0054	**Simulation of Dispersion of a Power Plant Plume using an Adaptive Grid Algorithm.** ***Atmospheric Environment, 35:4801-4818 (2001)***	**Dr. R. K. Srivastava (80%)** ***NRMRL, RTP, NC***	**Honorable Mention**	**For developing an efficient and cost-effective adaptive grid algorithm for use in air quality modeling.**
TF0056	**Isoprene emission capacity for US tree species.** ***Atmospheric Environment, 35(19):3341-3352 (2001)***	**Mr. Chris D. Geron (85%)** ***NRMRL, RTP, NC***	**Honorable Mention**	**Isoprene from Vegetation: Measurement Protocol and Emission Factor Development.**
TF0069	**^{226}Ra and ^{228}Ra activities associated with agricultural drainage ponds and wetland ponds in the Kankakee watershed, Illinois-Indiana, USA.** ***Journal of Environmental Radioactivity, 55:29-46 (2001)***	**Dr. William C. Sidle (80%)** **Ms. Deborah L. Roose (5%)** ***NRMRL, Cincinnati, OH***	**Honorable Mention**	**Application of Radium Isotopes Measurement Methodologies to the Identification of Non-point Fertilizer Pollution and Correction of Agricultural Drainage Practices.**
RA0072	**a) Understanding, deriving, and computing buffer capacity.** ***Journal of Chemical Education, 77(12):1640-1644 (2000)*** **b) Carbinolamines and geminal diols in environmental chemistry.** ***Journal of Chemical Education, 77(12):1644-1647 (2000)*** **c) Don't be tricked by your integrated rate plot!** ***Journal of Chemical Education, 78(7):921-923 (2001)***	**Mr. Edward Todd Urbansky (95%)** **Mr. Michael R. Schock (5%)** ***NRMRL, Cincinnati, OH***	**Honorable Mention**	**For raising awareness of environmentally relevant topics among educators in furtherance of chemically sound environmental research and its application in the field.**
RA0078	**Environmental Application of Raman Spectroscopy to Aqueous Systems.** ***Handbook of Raman Spectroscopy, I.I. Lewis & H.G.M. Edwards (eds), Marcel Dekker, NY, Chapter 17, pp.683-731 (2001)***	**Dr. Timothy W. Collette (60%)** ***NERL, Athens, GA***	**Honorable Mention**	**For seminal assessment of the importance of modern Raman spectroscopy for environmental application to aqueous systems.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
RM0083	**a) Trace Metal Loading on Water-Borne Soil and Dust Particles Characterized through the Use of Split-Flow Thin-Cell Fractionation.** ***Analytical Chemistry, 73(11):3492-3496 (2001)*** **b) Characterization of sub-Micrometer Aqueous Iron(III) Colloids Formed in the Presence of Phosphate by Sedimentation Field Flow Fractionation with Multi-Angle Laser Light Scattering Detection.** ***Analytical Chemistry, 73(14):4815-4820 (2001)***	**Dr. Matthew L. Magnuson (32%)** **Ms. Catherine A. Kelty (32%)** **Mr. Keith C. Kelty (12%)** **Mr. Darren A. Lytle (12%)** **Ms. Christina M. Frietch (12%)** ***NRMRL, Cincinnati, OH***	**Honorable Mention**	**Development of analytical tools for risk management decisions involving environmentally significant colloids and contaminated particles.**
RA0089	**a) Separation Methods for Environmental Technologies.** ***Environmental Progress, 20(1):1-11 (2001)*** **b) Membrane Technologies for Remediating Contaminated Soils: A Critical Review.** ***Journal Membrane Science, 151(1):75-85 (1998)***	**Dr. Subhas K. Sikdar (65%)** **Mr. Douglas Grosse (10%)** ***NRMRL, Cincinnati, OH***	**Honorable Mention**	**Role of advanced separation technologies to organic compounds and metals removal from dilute matrices.**
ER0092	**Sediment Toxicity Assessment: Comparison of Standard and New Testing Designs.** ***Archives of Environmental Contamination and Toxicology, 39:462-468 (2000)***	**Dr. Kay Ho (45%)** **Ms. Anne Kuhn (20%)** **Ms. Margaret Pelletier (20%)** **Dr. Robert Burgess (5%)** **Mr. Jonathan Serbst (5%)** ***NHEERL, RTP, NC***	**Honorable Mention**	**Development of a new miniaturized method for short-term, multi-species sediment testing.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
ER0093	**Using Winter Flounder Growth Rates to Assess Habitat Quality in Rhode Island' Coastal Lagoons.** ***Marine Ecology Progress Series, 201:287-299 (2000)***	**Dr. Lesa Meng (50%)** **Mr. Bryan Taplin (20%)** ***NHEERL, Narragansett, RI***	**Honorable Mention**	**Winter flounder growth and stable isotope ratios as indicators of habitat quality.**
ER0094	**Organic Contaminant Distributions in Sediments, polychaetes (*Nereis virens*) and American Lobster (*Homarus americanus*) from a Laboratory Food Chain Experiments.** ***Marine Environmental Research, 49:19-36 (2000)***	**Dr. Richard Pruell (35%)** **Mr. Bryan Taplin (35%)** **Mr. Doug McGovern (15%)** **Mr. Rick McKinney (10%)** **Dr. Susan Norton (5%)** ***NHEERL, Narragansett, RI***	**Honorable Mention**	**For proving new information on the accumulation and trophic transfer of toxic organic contaminants in marine biota.**
ER0096	**Using Energy Systems Theory To Define, Measure, and Interpret Ecological Integrity and Ecosystem Health.** ***Ecosystem Health, 6(3):181-204 (2000)***	**Dr. Daniel Campbell (100%)** ***NHEERL, Narragansett, RI***	**Honorable Mention**	**For progress toward quantifying the concepts of integrity and health as they are related to ecosystems.**
MM0109	**Estimating Separately Personal Exposure to Ambient and Non-Particulate Matter for Epidemiology and Risk Assessment: Why and How.** ***J. Air and Waste Management Association, 50(7):1167-1183 (2000)***	**Dr. William E Wilson (60%)** **Dr. David T. Mage (30%)** **Dr. Lester D. Grant (10%)** ***NCEA, RTP, NC***	**Honorable Mention**	**For presenting new and original techniques for the separation of personal exposure into its ambient and nonambient components.**
IR0113	**Projecting Population-Level Response of Purple Sea Urchins to Lead Contamination for an Estuarine Ecological Risk Assessment.** ***Journal of Aquatic Ecosystem Stress and Recovery, 7:177-185 (2000)***	**Dr. Timothy Gleason (60%)** **Dr. Wayne Munns, Jr. (20%)** **Dr. Dianne Nacci (20%)** ***NHEERL, Narragansett, RI***	**Honorable Mention**	**Projecting population-level responses in ecological risk assessments.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
ER0114	**Comparison of correlations between environmental characteristics and stream diatom assemblages characterized at genus and species levels.** ***Journal of the North American Benthological Society, 20(2):299-310 (2001)***	**Dr. Brian H. Hill (75%)** **Dr. Philip R. Kaufmann (5%)** ***NHEERL, Duluth, MN***	**Honorable Mention**	**Analysis of taxonomic levels of identifying stream diatom assemblages.**
ER0116	**Metapopulation dynamics and amphibian conservation.** ***Conservation Biology, 15(1):40-49 (2001)***	**Dr. Peter Trenham (50%)** ***NHEERL, Duluth, MN***	**Honorable Mention**	**Amphibian metapopulations: assumptions and implications for monitoring strategies.**
ER0120	**a) Fish -mediated nutrient and energy exchange between a Lake Superior coastal wetland and its adjacent bay.** ***Journal of Great Lakes Research, 27(1):98-111 (2001)*** **b) Factors influencing carbon, nitrogen, and phosphorus content of fish from a Lake Superior coastal wetland: Life history verses morphonmetrics.** ***Canadian Journal of Fisheries and Aquatic Sciences, 57:1243-1251 (2000)***	**Dr. John C. Brazner (40%)** **Mr. Danny K. Tanner (40%)** **Dr. John A. Morrice (10%)** ***NHEERL, Duluth, MN***	**Honorable Mention**	**Ecological linkages between coastal wetlands and the adjacent Great Lakes.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
HE0123	**a) Semen Quality and Reproductive Health of Young Czech Men Exposed to Seasonal Air Pollution.** ***Environmental Health Perspectives, 108(9):887-894 (2000)*** **b) Evaluation of Aneuploidy and DNA Damage in Human Spermatoza: Application in Field Studies.** ***Andrologia, 32:247-254 (2000)*** **c) Air Pollution and Sperm Aneuploidy in Healthy Young Men.** ***Environmental Epidemiology and Toxicology, 1:125-131 (1999)***	**Dr. Sally Perreault Darney (25%)** **Dr. Sherry G. Selevan (25%)** ***NHEERL, RTP, NC***	**Honorable Mention**	**Innovations in male reproductive risk assessment: Loss of genetic integrity in human spermatozoa after exposure to air pollution.**
MM0125	**A test of watershed classification systems for ecological risk assessment.** ***Environmental Toxicology and Chemistry, 19:1174-1181 (2000)***	**Dr. Naomi Detenbek (25%)** **Ms. Sharon Batterman (15%)** **Ms. Virginia Snarski (10%)** **Dr. John Brazner (15%)** **Ms. Jo Thompson (15%)** **Ms. Debra Taylor (10%)** ***NHEERL, Duluth, MN***	**Honorable Mention**	**Watershed classification strategy for assessing site-specific probability of impairment.**
RA0129	**Masculinization of Female Mosquitofish in Kraft Mill Effluent-Contaminated Fenholloway River Water is Associated with Androgen Receptor Agonist Activity.** ***Toxicological Sciences, 62:257-267 (2001)***	**Dr. Louise G. Parks (25%)** **Ms. Christy S. Lambright (35%)** **Dr. G. T. Ankley (5%)** **Dr. L. E. Gray, Jr. (25%)** ***NHEERL, RTP, NC***	**Honorable Mention**	**Identification of environmental androgenic activity in pulp mill effluent.**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
ER0131	**Effect on *Vallisneria americana* (l.) on Community Structure and Ecosystem Function in Lake Mesocosms. *Hyrobiologia, 418:137-146 (2000)***	**Dr. Cathleen Wigand (75%)** ***NHEERL, Narragansett, RI***	**Honorable Mention**	**Effect of the native submersed macrophyte *Vallisneria americana* (l.) on community structure and ecosystem function.**
ER0132	**Importance of Maternal transfer of the Photoreactive Polycyclic Aromatic Hydrocarbon fluoranthene from Benthic Adult Bivalves to Their Pelagic Larvae. *Environmental Toxicology and Chemistry, 19(11):2691-2698 (2000)***	**Ms. Marguerite Pelletier (70%)** **Dr. Robert Burgess (10%)** **Mr. Mark Cantwell (5%)** **Mr. Jonathan Serbst (5%)** **Dr. Kay Ho (5%)** **Mr. Stephen Ryba (5%)** ***NHEERL, Narragansett, RI***	**Honorable Mention**	**Benthic populations with pelagic larvae at greater risk to PAH contaminated sediments due to maternal transfer of contaminants.**
MM0136	**Establishing a Regional Monitoring Strategy: The Pacific Northwest Forest Plan. *Environmental Management, 23(2)179-192 (1999)***	**Dr. Paul Ringold (60%)** ***NHEERL, Corvallis, OR***	**Honorable Mention**	**A new approach to the design of environmental monitoring.**

Key to Acronyms used in the above Table:

NCEA	National Center for Environmental Assessment
NERL	National Exposure Research Laboratory
NHEERL	National Health and Environmental Effects Laboratory
NRMRL	National Risk Management Research Laboratory
NVFEL	National Vehicle and Fuels Emissions Laboratory
OPPTS	Office of Prevention, Pesticides and Toxic Substances
OSP	Office of Science Policy
OSWER	Office Solid Waste and Emergency Response
RTP	Research Triangle Park

** NOTE: The percentages given after each name represent the percent of the total level of effort as documented in the EPA nomination.*